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KEVIN L. RUSSELL
CHERNOFF, VILHAUER, MCCLUNG & STENZEL LLP
1600 ODSTOWER
601 SW SECOND AVENUE
PORTLAND, OR 97204

EXAMINER	
ROSWELL, MICHAEL	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/627,345
Filing Date: July 25, 2003
Appellant(s): BORDEN, GEORGE R.

MAILED

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Technology Center 2100

Kurt Rohlfs
Reg. No. 54,405
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 20 November 2006 appealing from the Office action mailed 25 July 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,642,939	Vallone et al.	11-2003
5,652,714	Peterson et al.	7-1997
6,820,238	Auflick et al.	11-2004
5,287,102	McKiel, Jr., Frank A.	2-1994

IBM Research Disclosure 41878. "Method for Providing Position Relative Audio Feedback in a Scrollable Content Area". International Business Machines Corporation, February 1999.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11, 12, 15, 19-22, 25, 29, and 30 are rejected under 35 U.S.C. 103(a) as being anticipated by Vallone et al (US Patent 6,642,939), hereinafter Vallone, Peterson et al (US Patent 5,652,714), hereinafter Peterson, and IBM Research Disclosure Number 41878, Published February 1999, hereinafter IBM-41878.

Regarding claim 11, Vallone teaches a first input for navigating upward through a hierarchical structure, a second input for navigating downward through the hierarchical structure (both taught as the use of a remote control of Fig. 14 for navigating a displayed list upwards and downwards, at col. 15, lines 32-46, the lists being displayed in Figs. 16-19), a first aural signal associated with a first input having a first characteristic indicating to a user upward navigation through the hierarchical structure, the first characteristic independent of the set of data from which upward navigation commences, and a second aural signal associated with a second input having a second characteristic indicating to a user downward navigation through the hierarchical

structure, the second characteristic independent of the set of data from which downward navigation commences (taught as the generation of transitional sounds in response to a user navigating the interface with the remote control, at col. 24, lines 49-55, and col. 8, lines 37-40).

However, Vallone fails to explicitly teach the second characteristic being audibly different from the first audio characteristic, both signals being from an arbitrary data point.

Peterson teaches a mechanism for manipulating transient events within a multimedia product, similar to the transition events of Vallone. Furthermore, Peterson teaches assigning sounds to "next state" and "previous state" tools, at col. 27, lines 31-35 and lines 43-52. It is well within the bounds of Peterson to assign the same sound to all "next state" tools and the same sound to all "previous state" tools.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Vallone and Peterson before him at the time the invention was made to modify the transitional sounds of Vallone to include the differentiation between "next state" and "previous state" transitions and their associated sounds, as taught by Peterson.

One would have been motivated to make such a combination for the advantage of allowing a user to easily identify which direction navigation is taking place within the hierarchy.

Furthermore, Vallone and Peterson fail to explicitly teach frequency ranges associated with the first and second aural signals that are dependent on the size of the data set comprising the hierarchical set of data.

IBM-41878 teaches a method for navigating a hierarchal structure, most notably web pages, similar to the method of Vallone and Peterson. IBM-41878 also teaches frequency ranges associated with aural signals that are dependent on the size of the data set comprising the hierarchical set of data, taught as the use of a variable audio tone used to indicate the size of the displayed scrollable content to the user.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Vallone, Peterson, and IBM-41878 before him at the time the invention was made to modify the aural interface for navigating the hierarchical structure of Vallone and Peterson to include the content size aural indicator of IBM-41878.

One would have been motivated to make such a combination for the advantage of allowing a visually impaired user to tell the size of the page. See IBM-41878, ¶ 2.

Regarding claim 12, Vallone teaches the first and second inputs being respective buttons, taught as the use of the buttons on a remote control for navigating the user interface, at col. 8, lines 37-40.

Regarding claim 15, Vallone teaches a third aural signal indicating to a user that an outer boundary of the hierarchical structure has been reached, taught as the generation of a warning sound that indicates to a user that they have attempted an action that is not allowed, such as moving the highlight bar to an area that does not exist, at col. 24, lines 49-55.

Regarding claim 19, Vallone teaches organizing the collection of data into a plurality of levels, each level including an associated hierarchical structure, taught as the navigation by the user through multiple interface levels, at col. 15, lines 32-46, and seen at Figs. 16-19.

Regarding claim 20, Vallone teaches including a third aural signal indicating to a user navigation to a different level, taught as the generation of transitional sounds in response to a user navigating the interface with the remote control, at col. 24, lines 49-55, and col. 8, lines 37-40, the levels being shown at col. 15, lines 32-46.

Regarding claim 21, Vallone teaches a first input for navigating from a current level to a sublevel of the current level, a second input for navigating from a current sublevel to the level (both taught as the use of a remote control of Fig. 14 for navigating a displayed list to different levels, using the "left" and "right" buttons, at col. 15, lines 32-46, the lists being displayed in Figs. 16-19), a first aural signal associated with a first input having a first characteristic indicating to a user navigation from a current level to a sublevel of the current level, the first characteristic independent of the set of data from which level navigation commences, and a second aural signal associated with a second input having a second characteristic indicating to a user navigation from a sublevel of the current level to the current level, the second characteristic independent of the set of data from which sublevel navigation commences (taught as the generation of transitional sounds in response to a user navigating the interface with the remote control, at col. 24, lines 49-55, and col. 8, lines 37-40).

However, Vallone fails to explicitly teach the second characteristic being audibly different from the first audio characteristic, both signals being from an arbitrary data point.

Peterson teaches a mechanism for manipulating transient events within a multimedia product, similar to the transition events of Vallone. Furthermore, Peterson teaches assigning sounds to "next state" and "previous state" tools, at col. 27, lines 31-35 and lines 43-52. It is well within the bounds of Peterson to assign the same sound to all "next state" tools and the same sound to all "previous state" tools.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Vallone and Peterson before him at the time the invention was made to modify the transitional sounds of Vallone to include the differentiation between "next state" and "previous state" transitions and their associated sounds, as taught by Peterson.

One would have been motivated to make such a combination for the advantage of allowing a user to easily identify which direction navigation is taking place within the hierarchy. IBM-41878 teaches a method for navigating a hierarchal structure, most notably web pages, similar to the method of Vallone and Peterson. IBM-41878 also teaches frequency ranges associated with aural signals that are dependent on the size of the data set comprising the hierarchical set of data, taught as the use of a variable audio tone used to indicate the size of the displayed scrollable content to the user.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Vallone, Peterson, and IBM-41878 before him at the time the invention was made to modify the aural interface for navigating the hierarchical structure of Vallone and Peterson to include the content size aural indicator of IBM-41878.

One would have been motivated to make such a combination for the advantage of allowing a visually impaired user to tell the size of the page. See IBM-41878, ¶ 2.

Regarding claim 22, Vallone teaches the first and second inputs being respective buttons, taught as the use of the buttons on a remote control for navigating the user interface, at col. 8, lines 37-40.

Regarding claim 25, Vallone teaches a third aural signal indicating to a user that an outer boundary of the hierarchical structure has been reached, taught as the generation of a warning sound that indicates to a user that they have attempted an action that is not allowed, such as moving the highlight bar to an area that does not exist, at col. 24, lines 49-55.

Regarding claim 29, Vallone teaches organizing the collection of data into a plurality of levels, each level including an associated hierarchical structure, taught as the navigation by the user through multiple interface levels, at col. 15, lines 32-46, and seen at Figs. 16-19.

Regarding claim 20, Vallone teaches including third and fourth aural signals indicating to a user navigation upwards and downwards through the hierarchical structure, taught as the generation of transitional sounds in response to a user navigating the interface with the remote control, at col. 24, lines 49-55, and col. 8, lines 37-40, the levels being shown at col. 15, lines 32-46.

Claims 13, 14, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vallone, Peterson, IBM-41878, and Auflick et al (US Patent 6,820,238), hereinafter Auflick.

Regarding claims 13 and 23, Vallone, Peterson and IBM-41878 teach an aural user interface for generating aural signals in response to user navigation in various directions through a hierarchical structure.

However, Vallone, Peterson and IBM-41878 fail to explicitly teach the first and second inputs for such navigation being opposite sides of a rocker switch.

Auflick teaches a method for the navigation of a multimedia player with a hierarchical structure, as shown in Figs. 3 and 4. Furthermore, Auflick teaches the use of a directory rocker switch for navigating through the different directories in the hierarchical structure, at col. 3, lines 18-20.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Vallone, Peterson, IBM-41878 and Auflick before him at the time the invention was made to modify the aural interface of Vallone, Peterson, and IBM-41878 to include the

navigation by a rocker switch of Auflick in order to obtain a user interface that responds to user input by a rocker switch with aural output.

One would be motivated to make such a combination for the advantage of the small size and ease of use afforded by a rocker switch.

Regarding claims 14 and 24, while Vallone, Peterson, IBM-41878 and Auflick have been shown to teach navigating an aural interface using a rocker switch, they both fail to explicitly teach continuous incremental navigation caused by constant depression of one side of the rocker switch. However, it is notoriously well known in the art to continuously navigate a list or hierarchical structure by way of constant depression of a button or switch, as such has been implemented in various remote controls, televisions, compact disc players, and the like. The examiner takes OFFICIAL NOTICE of these teachings. Therefore, it would have been obvious to one of ordinary skill in the art to modify the aural interface of Vallone, Peterson and Auflick to include continuous navigation by way of constant button depression, for the ease of use provided by a single button press.

Claims 16 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vallone, Peterson and IBM-41878.

Vallone, Peterson and IBM-41878 teach an aural user interface for generating aural signals in response to user navigation in various directions through a hierarchical structure. Vallone and Peterson fail to explicitly teach the first characteristic of a first aural signal being identical to the second characteristic of the second aural signal. However, it is notoriously well known in the art to output the same sound for similar navigational or scrolling functions, as is

found in Microsoft Internet Explorer's "Back" and "Forward" buttons, and in the navigational directional pads for many cell phones. The examiner takes OFFICIAL NOTICE of these teachings. Therefore, it would have been obvious to one of ordinary skill in the art to modify the aural interface of Vallone to include similar first and second characteristics for the first and second aural signals, respectively. One would have been motivated to make such a combination for the advantage of notifying the user that their selected action is of a common type with a similar action, such as back/forward and up/down navigation operations.

Claims 17, 18, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vallone, Peterson, IBM-41878 and McKiel, Jr. (US Patent 5,287,102), hereinafter McKiel.

Regarding claims 17 and 27, Vallone, Peterson and IBM-41878 teach an aural user interface for generating aural signals in response to user navigation in various directions through a hierarchical structure.

Vallone, Peterson and IBM-41878 fail to explicitly teach first and second aural signals having a location characteristic indicating to a user the relative position within the hierarchical structure of a selected data set.

McKiel teaches a method for aurally indicating user actions upon a hierarchical structure. Furthermore, McKiel teaches indicating to a user the relative position within the hierarchical structure of a selected data set, taught as the use of distinctive sounds or chords to notify the user of their location, at col. 5, lines 44-58.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Vallone, Peterson, IBM-41878 and McKiel before him at the time the invention was made to modify the aural interface of Vallone, Peterson and IBM-41878 to include the locational

aural information of McKiel in order to obtain an aural interface capable of notifying to a user their location within a hierarchy.

One would be motivated to make such a combination for the advantage of allowing a blind or visually impaired user to readily locate graphical elements on an interface. See McKiel, col. 3, lines 58-66.

Regarding claims 18 and 28, McKiel teaches the location characteristic of first and second aural signals being the frequency of the first and second characteristics, taught as the varying of sound output frequency based on the positional location of a user in a hierarchy, at col. 3, lines 57-65.

(10) Response to Argument

In response to Appellant's argument of pages 5-7 of the Brief, which contends the IBM-41878 reference fails to teach "a frequency range associated with said first aural signal that is dependent on the size of the data set comprising the hierarchical set of data" and "a frequency range associated with said second aural signal that is dependent on the size of the data set comprising the hierarchical set of data", the examiner respectfully disagrees. Appellant states on page 6, "*in addition*, the frequency may give some indication of the *size* of the list. For example, a high-pitched frequency may indicate that the list is relatively large, given that there...are other items associated with lower frequencies. With variable frequencies, an experienced user may achieve a high navigational efficiency." Appellant further states that a frequency range "not only indicates the relative position within the data set being navigated, but also is also indicative of relative absolute size of the data set, as well."

Through these arguments, it is apparent that since the IBM-41878 reference fails to teach *higher and lower frequency bounds* in relation to the content size, Appellant believes the

reference fails to teach "a frequency range...dependent on the size of the data set". As is well known in mathematics, a range is "the set of all values attained by a given function throughout its domain." The examiner contends that since the *rate of change* of the frequency varies based on the relative size of the total content, in scrolling through a large data set and a small data set a user would not hear the same set of tones. Therefore, the frequency range of the large data set and small data set are different.

For example, two well-known scrolling techniques are the utilization of keyboard up and down arrows, and utilization of the mouse scroll wheel. Both techniques scroll incrementally in a set number of lines. Suppose there are two documents to be scrolled by the method of IBM-41878: a first that takes two increments to scroll through, and a second that takes four increments. Furthermore, suppose that in scrolling down through a page, tones range from low frequency to high frequency. In scrolling through the first document, three tones would be heard (assuming a tone at the initialization of the document). An initial low tone, a mid-frequency second tone, and a high-frequency third tone are played. In scrolling through the second document, the same low tone, mid-frequency and high frequency tones are played, but there are also two further tones, between the low- and mid-frequencies and the mid- and high frequencies.

Therefore, even though Appellant's argument of page 7 that "the frequency of the audible signal emitted when a user is scrolling over the midway (50%) point of the entire data set within the scroll area is *the same, irrespective of the size of the data set*" holds true, it can be said that the frequency ranges are different, due to their differing set of tones.

The examiner would also like to note that the IBM-41878 reference specifically states, "playing audio feedback based on the current size...of scrollable content" and "a Visually Impaired user can tell both the size of the page, and their relative position within the page".

Thus, the IBM-41878 reference is directly concerned with indicating to the user the actual size of the scrollable content, contrary to the arguments of pages 6 and 7 of the Brief.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Michael Roswell

Conferees:

Kristine Kincaid

KRISTINE KINCAID
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Lynne Browne

Lynne H. Browne
Appeal Specialist, TQAS
Technology Center 2100